

## REMARKS

In response to the Final Office action dated October 22, 2009, Applicant respectfully requests reconsideration based on the above amendments and the following remarks. Applicant respectfully submits that the claims as presented are in condition for allowance.

Claims 34-46 are pending in the present Application. Claims 36-38, 40, 42 and 46 have been amended, leaving Claims 34-46 for consideration upon entry of the present amendment and following remarks.

Support for the claim amendments is at least found in the specification, the figures, and the claims as originally filed. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

### **Drawings and Claim Rejections Under 35 U.S.C. § 112**

The drawings stand objected to for allegedly failing to show every feature of the invention specified in Claims 34, 36, 37, 39, 40 and 42, and Claims 34-38 are rejected under 35 U.S.C. 112, first paragraph as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors(s) at the time the application was filed, had possession of the claimed invention.

Regarding **Claim 34**, it is alleged in the instant Office action “a driving signal wire (322/321) which transmits driving signals from an outside of the substrate to the gate driver and which comprises a first protrusion portion (no “first protrusion” shown in Figure 6) extended toward the gate pad, wherein the gate pad (95) comprises a second protrusion portion (122) extended toward the driving signal wire” is not shown in the drawings or described in the specification, and that there is no “first protrusion portion adjacent to and insulated from the second protrusion” in Figures 6 and 8. Applicant respectfully disagrees for the reasons set forth below.

Referring to Figures 6 and 8 (from Corrected Drawings filed April 23, 2007, reproduced below) of the claimed invention, a non-limiting embodiment is described in the specification as follows:

When VI tests for all the gate lines  $G_1-G_n$  are finished, the connecting portion 122 are cut along a cutting line L between the contact portions C1 and the signal lines 321 and 322 using an appropriate apparatus such as a laser trimming device. (See, Substitute Specification filed April 23, 2007, page 17, lines 9-11.)

Although connecting portions between the pad and the gate driving signal wire (or between the pad and the data driving signal wire) are divided as a result of the VI test, some of them remain connected to the gate driving signal wire (or the data driving signal wire), and accordingly functions as parallel resistors. Therefore, resistance of the gate driving signal wire (or the data driving signal wire) is reduced, and accordingly efficiency in signal transmission is enhanced. (See, Substitute Specification filed April 23, 2007, page 20, lines 21-26.)

That is, the driving signal wire (321) connects to the gate pad (129) through the connecting portion (122). The connecting portion (122) is cut along a cutting line (dotted line L), and one portion of the connecting portion (122) remains connected to the driving signal wire (321). Thus, the one portion of the connecting portion (122) remaining connected to the driving signal wire (321) is the “first protrusion” as claimed.

The remaining portion of the connecting portion (122), which is separated from the “first protrusion,” is connected to the gate pad (129), extends toward the driving signal wire (321), and is adjacent to the one portion of the connecting portion (122) (as the “first protrusion”), as claimed. Since the connecting portion (122) is cut along a cutting line (dotted line L) (e.g., into a portion to the left of line L, and a portion to the right of line L), the one (left) portion of the connecting portion (122) (as the “first protrusion”) and the remaining (right) portion of the connecting portion (122) are insulated from each other.

Therefore, Applicant respectfully submits that “a driving signal wire (322/321) which transmits driving signals from an outside of the substrate to the gate driver and which comprises a first protrusion portion (the left portion of the connecting portion (122) remaining connected to the driving signal wire (321) in Figures 6 and 8 and described above) extended toward the gate pad (129), wherein the gate pad (129) comprises a second protrusion portion (the right portion of the connecting portion (122) remaining connected to the gate pad (129) in Figures 6 and 8 and described above) extended toward the driving signal wire (321) and the first protrusion portion is adjacent to and insulated from the second protrusion,” is shown in at least Figures 6 and 8, is described in the specification, and is not new subject matter.

FIG. 6

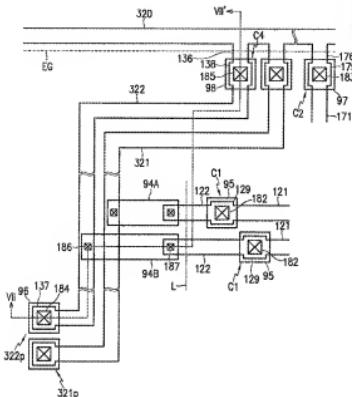
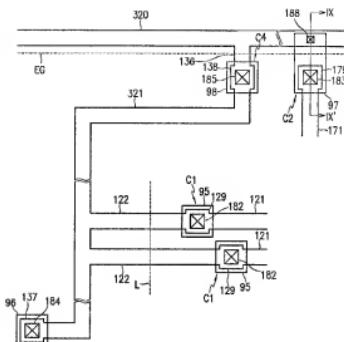


FIG. 8



Regarding **Claim 36**, it is alleged in the instant Office action “a flexible printed circuit connected to the substrate and comprising a first driving pad” is not shown in the drawings or described in the specification.

In response, Claim 36 is hereinabove amended to include “a test pad and a first driving pad disposed on the substrate, and a flexible printed circuit connected to the substrate through the first driving pad.”

Referring to Figure 3A (from Corrected Drawings filed April 23, 2007, reproduced below), C4 indicates the “first driving pad” of the claimed invention. A non-limiting embodiment is described in the specification as follows:

Referring to FIG. 3A, ...A plurality of gate driving lines 321, 322, 323a-323d and 324 are formed in the vicinity of the gate driving ICs 440. Some gate driving signal lines 321, 322, and 324 are electrically connected to respective gate driving signal lines 521, 522, and 524 of the data FPC film 510 via contact portions C4 located near the upper edge of the assembly panel 300.... (See, Substitute Specification filed April 23, 2007, page 9, lines 27-34.)

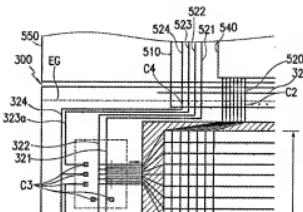
The uppermost signal line 323a among signal lines 323a-323d is connected to the gate driving signal line 523 of the data FPC film 510 via the contact portion C4, and is also connected to the input terminal of the uppermost gate driving IC 440 via the contact portion C3. (See, Substitute Specification filed April 23, 2007, page 10, lines 6-9.)

The protective layer 180 has contact holes 183 and 185 that respectively expose the data pad 179 at the contact portion C2 and the pad 138 of the gate driving signal wire at the contact portion C4. (See, Substitute Specification filed April 23, 2007, page 15, lines 25-27.)

A probe (not shown) of an inspecting apparatus is put in contact to the contact portion (e.g., C4) and the test pad (e.g., 321p) of one (e.g., the signal line 321) of the two signal lines 321 and 322 connected to the gate lines G<sub>1</sub>-G<sub>n</sub>, and then a gate test signal having a voltage (e.g., gate-on voltage V<sub>on</sub>) sufficient to turn on the switching elements Q is applied thereto. (See, Substitute Specification filed April 23, 2007, page 16, lines 22-26.)

Therefore, Applicant respectfully submits that “a test pad and a first driving pad disposed on the substrate, and a flexible printed circuit connected to the substrate through the first driving pad” of amended Claim 36 is shown in at least Figure 3A, and is described in the specification.

FIG. 3A



Regarding **Claim 37**, it is alleged in the instant Office action “wherein the gate driver connected the driving signal wire” is not shown in the drawings or described in the specification.

In response, Claim 37 is hereinabove amended to include “further comprising a second driving pad disposed on the substrate, wherein the gate driver connects to the driving signal wire through the second driving pad.”

Referring to Figure 3A (from Corrected Drawings filed April 23, 2007, reproduced above), C3 indicates the “second driving pad” of the claimed invention. A non-limiting embodiment is described in the specification as follows:

Referring to FIG. 3A,... Some gate driving signal lines 321, 322, and 324 are electrically connected to...input terminals of the gate driving ICs 440 via contact portions C3. The contact portions C3 are positioned at one ends of branches of the respective driving signal lines 321, 322 and 324, or are positioned on the respective lines 321, 322 and 324. The contact portions C3 for the lines 321 and 322 may lie directly on the lines 321 and 322 because the lines 321 and 322 have large line width. The size of contact portions C3 on those lines 321 and 322 can have bigger dimension than other contact portions C3. (See, Substitute Specification filed April 23, 2007, page 9, line 27 to page 10, line 5.)

The uppermost signal line 323a among signal lines 323a-323d is...connected to the input terminal of the uppermost gate driving IC 440 via the contact portion C3. Remnant signal lines 323b-323d are connected to input/output terminals of adjacent gate driving ICs 440 via contact portions C3. (See, Substitute Specification filed April 23, 2007, page 10, lines 6-10.)

In addition, because the signal lines 321 and 322 are big in line width, the contact portions C3 for contacts to the gate driving ICs 440 are formed directly on the signal lines 321 and 322, and their size is big in accordance with the line width of the signal lines 321 and 322. Accordingly, VI tests can be executed by applying test signals directly to the contact portions C3 that are repeatedly positioned on the signal lines 321 and 322, instead of applying the test signals to ends of the signal lines. (See, Substitute Specification filed April 23, 2007, page 17, lines 27-32.)

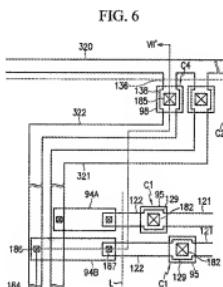
Therefore, Applicant respectfully submits that “further comprising a second driving pad disposed on the substrate, wherein the gate driver connects to the driving signal wire through the second driving pad” of amended Claim 37 is shown in at least Figure 3A, and is described in the specification.

Regarding **Claims 39 and 40**, it is alleged in the instant Office action “a first end of each of the plurality of first connecting portions is connected to the first driving signal wire and a second end of each of the plurality of first connecting portions is connected to the gate pad and each of the plurality of first connecting portions is divided into two parts” and “a first end of each of the plurality of second connecting portions connect to the second driving signal wire and a second end of each of the plurality of second connecting portions connects to the gate pad and each of the plurality of second connecting portions is divided into two parts” is respectively not shown in the drawings. Applicant respectfully disagrees for the reasons set forth below.

As discussed above with respect to Claim 34, the connecting portion (122) is cut along a cutting line (dotted line L), and a portion of the connecting portion (122) remains connected to the driving signal wire (132) as the “first protrusion” of the claimed invention. The remaining portion of the connecting portion (122) is connected to the gate pad (129).

That is, “a first end of each of the plurality of first connecting portions (top 122) is connected to the first driving signal wire (321) and a second end of each of the plurality of first connecting portions (top 122) is connected to the gate pad (top 129) and each of the plurality of first connecting portions (top 122) is divided into two parts (one to the left of line L and one to the right of line L). ”

Similarly, “a first end of each of the plurality of second connecting portions (bottom 122) connect to the second driving signal wire (322) and a second end of each of the plurality of second connecting portions (bottom 122) connects to the gate pad (bottom 129) and each of the plurality of second connecting portions is divided into two parts (one to the left of line L and one to the right of line L).”



Therefore, Applicant respectfully submits that “each of the plurality of first connecting portions is divided into two parts” and “each of the plurality of second connecting portions is divided into two parts” of Claims 39 and 40 are shown in at least Figures 6 and 8, and are described in the specification.

Regarding **Claim 42**, it is alleged in the instant Office action “a flexible printed circuit connected to the substrate and comprising a first driving pad and a second driving pad” is not shown in the drawings.

In response, Claim 42 is hereinabove amended to include “a first driving pad and a second driving pad disposed on the substrate, and a flexible printed circuit connected to the substrate through the first driving pad and the second driving pad.”

As discussed above with respect to Claims 36 and 37, C4 indicates the “first driving pad” and C3 indicates the “second driving pad” of the claimed invention.

For all the reasons discussed above, Applicant respectfully submits that “a first driving pad and a second driving pad disposed on the substrate, and a flexible printed circuit connected to the substrate through the first driving pad and the second driving pad” of amended Claim 42 is shown in at least Figure 3A, and described in the specification.

Applicant respectfully submits that the drawings show every feature of the invention specified in the claims, that the claims contain subject matter which was described in the specification, and that Claims 34, 36, 37, 40 and 42, as respectively amended, meet the requirements of 37 CFR 1.83(a) and 35 U.S.C. 112, first paragraph. Entry of the claim amendments, reconsideration, withdrawal of the relevant drawing objections and withdrawal of the relevant claim rejections are respectfully requested.

**Claim Rejections Under 35 U.S.C. §102**

In order to anticipate a claim under 35 U.S.C. §102, a single source must contain all of the elements of the claim. *Lewmar Marine v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements “arranged as in the claim.” *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1274 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Claims 39-41 are rejected under 35 U.S.C. §102(e) as being allegedly anticipated by Jeon, U.S. Patent Publication 2003/0117536 A1 (hereinafter “Jeon”).

Applicant submits herewith a certified translation of the priority document, Korean Patent Application No. 10-2002-0050134, which was filed on August 23, 2002. Since this priority document was filed before the filing date of Jeon, December 23, 2002, Applicant has properly antedated Jeon. Reconsideration and withdrawal of all of the claim rejections in which Jeon is used as a reference are respectfully requested.

Since Jeon used in the rejection of Claims 39-41 has been antedated, and since Claims 34, 36, 37, 40 and 42, as respectively amended, meet the requirements of 37 CFR 1.83(a) and 35 U.S.C. 112, first paragraph, and are not further rejected over prior art, Applicant respectfully submits that Claims 34, 36, 37 and 39-42 are allowable. Applicant respectfully submits that Claims 35, 38 and 43-46 are correspondingly allowable as depending upon independent Claims

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34 and 39, respectively. Entry of the claim amendments, reconsideration, withdrawal of the relevant claim rejections and allowance of Claims 34-46 are respectfully requested.

**Conclusion**

All of the objections and rejections are herein overcome. In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. No new matter is added by way of the present Amendments and Remarks, as support is found throughout the original filed specification, claims and drawings. Prompt issuance of Notice of Allowance is respectfully requested.

The Examiner is invited to contact Applicant's attorney at the below listed phone number regarding this response or otherwise concerning the present application.

Applicant hereby petitions for any necessary extension of time required under 37 C.F.R. 1.136(a) or 1.136(b) which may be required for entry and consideration of the present Reply.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicant's attorneys.

Respectfully submitted,

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